Main Injector RF Control Application (PA1677, I3) - Bug #7639

Saving file doesn't work

01/14/2015 03:38 PM - Kyle Hazelwood

Status:	Closed	**Start date:**	01/14/2015
Priority:	High	**Due date:**	
Assignee:	Kyle Hazelwood	**% Done:**	0%
Category:	Client	**Estimated time:**	0.00 hour
Target version:		**Spent time:**	8.00 hours

Description

The operators reported that I3 would return error: "Err:insert new rec failed,try to recover old one SQL__SYNTAX". Elog entry 41980.

Related issues:

Related to Recycler RF Control Application (PA4225, R3) - Bug #7752: Unable t...	**Closed**	**01/31/2015**

History

#1 - 01/14/2015 03:40 PM - Kyle Hazelwood

- Description updated

#2 - 01/15/2015 10:32 AM - Kyle Hazelwood

- File I3SQLError.PNG added

- File I3SQLInsert.PNG added

- File I3SQLInsertDataNaN.PNG added

- Description updated

- Assignee set to Kyle Hazelwood

The application appears to be passing NaN to the DB for a few float values.

#3 - 01/15/2015 10:34 AM - Kyle Hazelwood

- Category set to Client

#4 - 01/18/2015 12:12 PM - Kyle Hazelwood

- File I3Error.gif added

#5 - 01/18/2015 06:39 PM - Kyle Hazelwood

So the save feature works as such:

1. hv.cpp > hv_save()
2. hv.cpp > hv_convert()
3. hv.cpp > table.cpp > table_save()
4. table.cpp > table_rec_w()

Everything appears fine until table_rec_w(). The float array leaving table_save() has no NaNs. As soon as the float array of values is passed to the table_rec_w() routine using the GEN_TABLE struct the float array is padded with some very small values and NaN at indices 231 and 233. I can get the save to complete successfully by overriding the values at indices 231 and 233 with zero.

#6 - 01/18/2015 06:48 PM - Kyle Hazelwood

This may have been a problem for sometime. The I3 program log shows this error occurring back on December 30, 2014. Unfortunately the log has a 1000 line limit which puts the logger at December 17, 2014. There are no successful file saves recorded other than the one I fudged tonight.

#7 - 01/18/2015 06:50 PM - Kyle Hazelwood

- File I3Log.PNG added

- File I3Log2.PNG added

- File I3Log3.PNG added

#8 - 01/31/2015 02:57 AM - Kyle Hazelwood

In hv_save() the HV_TABLE object contains a TABLE_HDR object, a float[20] for pars and an HV_SLOT[52] for slots. The HV_TABLE object is cast to a GEN_TABLE object that contains a TABLE_HDR object and a float[236]. Each HV_SLOT is 4 floats. That makes a HV_TABLE object actually a TABLE_HDR object and a float[228], this is shy 8 floats for the GEN_TABLE object (two HV_SLOTS). The GEN_TABLE object never populates its last 8 float indices leaving in a couple NaNs.

#9 - 01/31/2015 03:23 AM - Kyle Hazelwood

- Status changed from Assigned to Resolved

I'm able to fix the issue completely by increasing the HV_MAX_SLOTS constant in table.h to 54 from 52. This causes the GEN_TABLE struct to be filled completely with zeros as padding. I'm not sure why this problem occurred. There hasn't been any significant updates for years to any of the code responsible for this feature. I'm testing the fix tonight.

#10 - 01/31/2015 03:59 AM - Kyle Hazelwood

- Status changed from Resolved to Closed

The changes are in the latest release of PA1677.

#11 - 01/31/2015 04:03 AM - Kyle Hazelwood

- Related to Bug #7752: Unable to save files added

Files

I3SQLError.PNG	5.12 KB	01/15/2015	Kyle Hazelwood
I3SQLInsert.PNG	3.85 KB	01/15/2015	Kyle Hazelwood
I3SQLInsertDataNaN.PNG	3.84 KB	01/15/2015	Kyle Hazelwood
I3Error.gif	25.8 KB	01/18/2015	Kyle Hazelwood
I3Log.PNG	27.4 KB	01/19/2015	Kyle Hazelwood
I3Log2.PNG	28.5 KB	01/19/2015	Kyle Hazelwood
I3Log3.PNG	6.76 KB	01/19/2015	Kyle Hazelwood